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SUBJECT: SCIENCE AND WEAPONS REVIEW CABLE, SW SWRC 28 SEPTEMBER 1990

IRAQ: THE LASER HAZARD TO US FORCES IN THE PERSIAN

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RANGEFINDERS ON IRAQI TANKS POSE THE PRIMARY LASER EYE HAZARD TO US FORCES IN THE GULF; AIRBORNE LASER TARGET DESIGNATORS MAY ALSO BE A THREAT. FROM EVIDENCE PRESENTLY AVAILABLE, WE JUDGE IT UNLIKELY THAT IRAQ HAS FIELDED A DEDICATED LASER BLINDING WEAPON.

1. IRAQ: THE LASER HAZARD TO US FORCES IN THE PERSIAN
GULF
THE IRAQIS HAVE FIELDED TANKS THAT INCORPORATE LASER
RANGEFINDERS (LRFS).

SEVERAL MODELS OF IRAQI AIRCRAFT INCORPORATE LASER TARGET
DESIGNATORS (LTDS).

HAVE A GROUND-BASED LTD.

THE IRAQIS ARE NOT KNOWN TO

COMMENT:

WE ASSESS THAT:

X -- THE PRIMARY EYE HAZARD FROM IRAQI FORCES EXISTS FROM THEIR TANK LRFS; AIRBORNE LTDS MAY ALSO POSE A THREAT. IN THE EVENT OF HOSTILITIES, US GROUND FORCES WILL BE THE MOST VULNERABLE. AIRCREWS OF HELICOPTERS ALSO MAY BE VULNERABLE IF IRAQI TANK CREWS USE LRFS TO ENGAGE THE HELICOPTERS WITH THEIR MAIN GUN, AS MANY ARMIES TRAIN TO DO. IT IS UNLIKELY THAT US SAILORS OR AIRCREWS OF HIGH-PERFORMANCE AIRCRAFT WILL BE EXPOSED TO HAZARDOUS LEVELS OF LASER RADIATION FROM IRAQI LRFS OR LTDS.

X -- IT IS UNLIKELY THAT THE IRAQIS HAVE ACQUIRED OR DEVELOPED A DEDICATED LASER BLINDING WEAPON.

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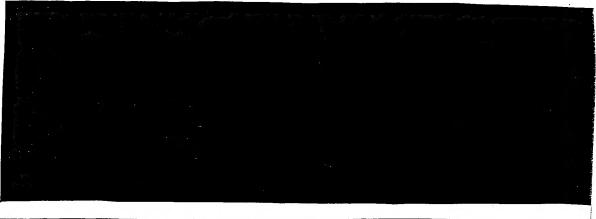
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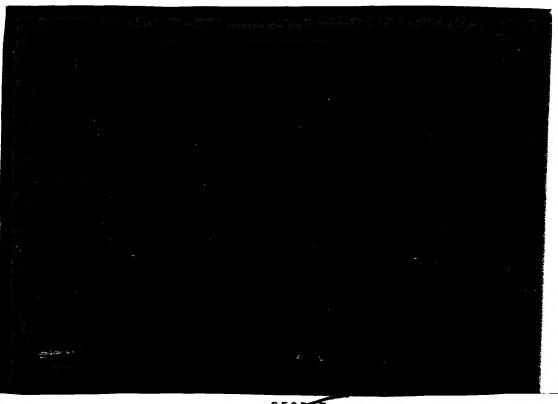
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IRAQI TANK LRFS MAY PRESENT AN EYE HAZARD TO UNPROTECTED US SOLDIERS, ESPECIALLY IF THEY ARE LOOKING THROUGH A MAGNIFYING OPTIC SUCH AS M-19 7-POWER BINDCULARS. SINCE MOST IRAQI GROUND-BASED LRFS ARE INCORPORATED INTO TANKS, THE MOST LIKELY TARGETS TO BE IRRADIATED IN BATTLE WILL BE US ARMOR AND INFANTRY. IT IS UNLIKELY THAT FIXED-WING, HIGH-PERFORMANCE US AIRCRAFT WILL BE IRRADIATED BY THESE TANK LRFS.





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BECAUSE OF THE EMPLOYMENT DOCTRINE WE WOULD EXPECT FOR THE LTDS IN THE IRAQI INVENTORY, WE ASSESS THAT THEY PROBABLY WILL NOT PRESENT A SIGNIFICANT EYE HAZARD TO US FORCES: X-1- THE EYE HAZARDS DESCRIBED IN THIS ARTICLE ARE BASED ON EXPOSURE TO A SINGLE LASER PULSE.

X -- MANY OF THE TARGETS FOR IRAQI LASER-GUIDED MUNITIONS (LGMS) WILL BE OF HIGH VALUE AND LARGE--SUCH AS BRIDGES OR SURFACE SHIPS--SO THAT THE LIKELIHOOD OF IRRADIATING A PERSON IS LOW.

X -- THE LTDS WILL BE AIMED AT GROUND OR SEA TARGETS ONLY. THUS, US AIRCREWS SHOULD NOT BE AT RISK.

X -- IN THE IRAN-IRAQ WAR THE IRAQIS EMPHASIZED AIRCRAFT SURVIVABILITY IN COMBAT MISSIONS. THEY PROBABLY WILL FOLLOW THE SAME DOCTRINE AGAINST US FORCES AND THUS WILL ATTEMPT TO MAXIMIZE THEIR STANDOFF RANGE (10 TO 15 KM) WHEN DELIVERING LGMS. THUS, WE BELIEVE IT IS UNLIKELY THAT US FORCES AT OR NEAR THE DESIGNATED TARGETS WILL BE EXPOSED TO A HAZARDOUS LEVEL OF LASER RADIATION.

THE EYE THREAT FROM IRAQI LASER WEAPONS

WE REMAIN UNCONVINCED THAT THE IRAQIS HAVE FIELDED A DEDICATED LASER WEAPON, DESIGNED SPECIFICALLY TO BLIND ENEMY SOLDIERS.



THE LASERS KNOWN TO BE AVAILABLE TO OR OBTAINED BY THE IRAQIS

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IN THE 1980S WERE EITHER LOW-ENERGY MILITARY LRFS

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SOMEWHAT SKEPTICAL THAT A SCIENTIFIC/COMMERCIAL LASER CAN BE EASILY <u>WEAPONIZED</u> AND FIELDED AND COULD HAVE CAUSED THE REPORTED THOUSANDS OF IRANIAN EYE CASUALTIES.



POSSIBLE THAT THE IRAQIS MAY HAVE DEVELOPED OR MODIFIED A LASER FOR USE AS A <u>BLINDING WEAPON</u>, THE EVIDENCE AT THIS TIME PREVENTS US FROM PROJECTING THAT THE IRAQIS HAVE FIELDED A DEDICATED LASER <u>BLINDING WEAPON</u>.

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